

10/568723

IAP2006000000 17 FEB 2006

AMENDED CLAIMS [received by the International Bureau on 15 April 2005 (15.04. 2005); original claims 1-23 replaced by amended claims 1-23] 1. A method for separating mono-branched hydrocarbons from a mixture of hydrocarbons comprising: - bringing said mixture into contact with one adsorbent having a selectivity order from mono-branched to linear further to multi-branched hydrocarbons, - preferentially and selectively adsorbing said mono-branched hydrocarbons by said adsorbent, and - desorbing said mono-branched hydrocarbons from said adsorbent, thereby allowing to selectively separate said mono-branched hydrocarbons.

2. Method according to claim 1. comprising the step of bringing said mixture into contact with only one adsorbent.

3. Method for separating mixtures of hydrocarbons into fractions of linear, mono- branched and multi-branched hydrocarbons comprises the steps of: a. bringing said mixture into contact with only one adsorbent, said adsorbent having a selectivity order from mono-branched to linear further to multi- branched hydrocarbons, b. separating a stream enriched in multi-branched hydrocarbons from said adsorbent, thereby allowing to separate said multi-branched hydrocarbons, c. desorbing the linear hydrocarbons from said adsorbent, thereby allowing to separate said linear hydrocarbons, and d. desorbing said mono-branched hydrocarbons from said adsorbent, thereby allowing to separate said mono-branched hydrocarbons.

4. Method according to any of claims 1 to 3, wherein said hydrocarbons are alkanes.

5. Method according to any of claims 1 to 4, whereby said adsorbent is a zeolitic adsorbent.

6. Method according to any of claims 1 to 5, whereby said adsorbent is a zeolitic adsorbent having cavities of which the dimensions are larger than the pore openings giving access to these cavities, these cavities having a smallest diameter of at least 4.5 Angström and a largest diameter of at least 10 Angström.

7. Method according to claim 6, whereby said cavities have a smallest diameter between 4.5 and 15 Angström, and a largest diameter between 10 and 25 Angström.

8. Method according to any of claims 1-7, whereby said zeolitic adsorbent comprises the molar relationship  $X_{203} : (n) YO_2$  wherein n is at least 2, X is a trivalent element and Y is a tetravalent element.

9. Method according to claim 8, whereby n is at least 2, wherein X is selected from the group comprising aluminium, iron, gallium and boron and wherein Y is silicon.

10. Method according to claim 8 or 9, whereby n is at least 10, wherein X is aluminium, and wherein Y is silicon.

11. Method according to any of claims 1-10, whereby said zeolitic adsorbent is MCM- 22.

12. Method according to any of claims 1-11, wherein said zeolitic adsorbent has a pore occupancy comprised between 0.01 and 100%.

13. Method according to any of claims 1-12, whereby said mixture of alkanes is a mixture of linear, mono-branched and multi-branched alkanes.

14. Method according to claim 13, wherein said mixture comprises 0.1-99.9% linear, 0.1-99.9% mono-branched and 0.1-90% multi-branched alkanes.
15. Method according to any of claims 13-14, whereby said mixture of alkanes is a mixture of linear and mono-branched alkanes in a ratio comprised between 1: 100 to 100: 1.
16. Method according to claim 15, wherein said mixture comprises mono-branched and linear alkanes in a ratio of 1: 1.
17. Method according to any of claims 1-16, wherein said separation is based on entropic effects.
18. Use of only one adsorbent for separating mono-branched hydrocarbons from a mixture of hydrocarbons.
19. Use of one adsorbent according to claim 18 for preferentially adsorbing mono- branched hydrocarbons from said mixture.
20. Use according to claim 18 or 19, wherein said adsorbent is an adsorbent as defined in any of claims 5-12.
21. Use according to any of claims 18-20, wherein said mixture is a mixture as defined in any of claims 13-16.
22. Use according to any of claims 18-21, wherein said separation is based on entropic effects.
23. Use of MCM-22 as a zeolite having a catalytic and an adsorbent activity for separating mixtures of non-aromatic hydrocarbons into fractions of linear, mono- branched and multi-branched hydrocarbons.